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PRESENCE OF B. LACTIMORBI IN THE THROATS OF CATS

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A number of articles and reports have appeared in the last few years dealing with the appearance of diphtheria bacilli in the nose and throat of cats and drawing the inference that these animals are more or less frequent carriers of diphtheria.

In view of the findings in human throats, noted in a previous article,[1] indicating the danger of making an incorrect diagnosis of diphtheria on account of the presence of B. lactimorbi, it occurred to one of us that some of these reports might be due to morphologic appearances of a similarly deceptive nature. To determine the truth or falsity of this theory cultures were made from two series of cats, and all organisms growing out on serum with the formation of metachromatic granules were isolated. It was originally intended to carry out the same technic with other groups of cats, but the results in the first two series made this unnecessary.

One set of cats was examined at the kennels of the Humane Society of Cleveland, and the other in the Department of Pharmacology of Western Reserve Medical School. The first series consisted of 12 and the second of 10 cats.

Swabs were made from the noses and throats and smeared on blood serum, which was incubated for 18 hours at 37 C. Stained preparations were examined for granules. As B. lactimorbi forms spores, all apparently positive cultures were heated in suspension to 80 C. for 10 minutes and inoculated on glycerol agar.

By this method all nonspore-forming organisms were killed, and only the aerobic spore bearers remained. These consisted of 2 groups, one, as might be expected, belonging to the general type usually spoken of as "hay bacillus," though known to represent more than one variety, while the others were typical B. lactimorbi. It is interesting to note, in connection with the hay bacillus group, that many of the forms

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[1] Perkins, Roger G., and Spreng, D. S.: Jour. Infect. Dis., 1921, 29, p. 513.

contained definite metachromatic granules, though the morphology of course did not suggest diphtheria, and should not cause confusion.

In the first series, 12 animals, B. lactimorbi was isolated in 2 instances, and in the second series, 10 animals, in 5 instances. It seems probable that the larger number in the second series is due to the fact that the cats, which were undergoing a feeding experiment, were in closer contact, and that there was more opportunity for a generalized kennel infection than in the first series in which the animals were separated.

There are, of course, two main possibilities of error: first, that the medium itself was infected with this spore bearer, which then grew out under incubator conditions. Blank tubes incubated under the same conditions and for the same period, remained sterile, and the rest of the batch, which was used in a routine manner did not show any of the organisms. The second possibility is that as this was the organism which had recently been studied in the laboratory there might have been an infection of the tubes in handling. With the exception of the stock cultures in the refrigerator none of these organisms had been available for months and were not under investigation at the time of this special study.

It would appear therefore that in Cleveland there is a widespread distribution of B. lactimorbi, under conditions that make it a frequent contamination accessible to the nose and throat, possibly in dust, or on food. Since it is nonpathogenic, the only importance from the public health standpoint is the danger of false interpretation of the findings, with all the consequences which may follow such error.

In some of the articles referred to there has been described a definite lesion of the throat or nose and the isolation of an organism which was identified as B. diphtheriae and proved to be toxic. It is most interesting that this should be found true, even in a limited number of cases, but the fact of proof that true diphtheria may be found in sickness of animals is likely to lead to more cursory examinations, and the determination of the diagnosis on a morphologic basis alone; the results of our investigations show that this is a distinct danger.

No descriptions of organisms of this type have been published except as found in the Southwest, in the original work of Jordan and Harris, and in Cleveland. It would be of value to learn how wide is the true distribution, and the authors hope that these two articles will stimulate investigations in other parts of the country to determine whether this group is common to all the states or is confined to a limited district.

SUMMARY

The occurrence of B. lactimorbi in the throat of cats is described, and the danger of this bacillus being mistaken for B. diphtheriæ is emphasized.